

Nucleic Acids Research

- [Oxford Journals](#)
- [Life Sciences](#)
- [Nucleic Acids Research](#)
- [Volume 17, Number 13](#)
- Pp. 4957-4974

Nucleic Acids Research, 1989, Vol. 17, No. 13 4957-4974
© 1989

This Article

- ▶ [Print PDF \(969K\)](#)
- ▶ [Alert me when this article is cited](#)
- ▶ [Alert me if a correction is posted](#)

Services

- ▶ [Email this article to a friend](#)
- ▶ [Similar articles in this journal](#)
- ▶ [Alert me to new issues of the journal](#)
- ▶ [Add to My Personal Archive](#)
- ▶ [Download to citation manager](#)
- ▶ [Cited by other online articles](#)
- ▶ [Request Permissions](#)
- ▶ [Commercial Re-use Guidelines for Open Access NAR Content](#)

Google Scholar

- ▶ [Articles by Connolly, B. A.](#)
- ▶ [Articles by Newman, P. C.](#)

PubMed

- ▶ [Articles by Connolly, B. A.](#)
- ▶ [Articles by Newman, P. C.](#)

Bernard A. Connolly and Patrick C. Newman

Department of Biochemistry, University of Southampton Bassett Crescent East, Southampton SO9 3TU, UK

Received April 21, 1989. Revised June 5, 1989. Accepted June 5, 1989.

Methods are given for the synthesis of derivatives of 4-thiothymidine (^{4S}T), 5-methyl-2-pyrimidinone-1- β -D(2'-deoxyriboside) (^{4H}T) and 2-thiothymidine (^{2S}T) suitable for incorporation into oligodeoxynucleotides by the cyanoethyl phosphoramidite method. ^{4H}T and ^{2S}T are incorporated with no base protection but the sulphur atom in ^{4S}T is protected with an S-sulphenylmethyl (-SCH₃) function. This can be removed with dithiothreitol after synthesis. These T analogues have been incorporated into GACGATATCGTC, a self-complementary dodecamer containing the Eco RV recognition site (Eco RV) in place of the two T residues within this site. Although pure dodecamers are obtained in each case the syntheses are not as efficient as those seen when normal unmodified bases are used mainly due to the chemical reactivity of ^{4S}T , ^{4H}T and ^{2S}T . Some of the chemical properties of oligonucleotides containing these bases (reactivity towards NH₃) as well as their physical properties (melting temperatures, U.V., fluorescence and circular dichroism spectra) have been determined and are discussed.

This article has been cited by other articles:

JBC Online

▶ [HOME](#)

W. F. Lima, J. G. Nichols, H. Wu, T. P. Prakash, M. T. Migawa, T. K.